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QUARTERLY JOURNAL
OF THE
STATISTICAL SOCIETY.

SEPTEMBER, 1860.

*The ADDRESS of the PRINCE CONSORT on opening as PRESIDENT the
Fourth Session of the INTERNATIONAL STATISTICAL CONGRESS.*

THE Fourth Session of the International Statistical Congress, appointed at its third meeting at Vienna, in 1857, to be held in London, was opened by the Prince Consort, as President, on Monday, the 16th July, 1860, in the Great Hall of King's College, Somerset House. His Royal Highness delivered the following address on the occasion:—

Gentlemen,—The Statistical Congress of All Nations has been invited by the Government to hold its fourth meeting in this metropolis, in conformity with the wishes expressed by the late Congress held at Vienna in 1857.

Although under these circumstances it would have been more properly within the province of a member of the Government and Minister of the Crown to fill this chair and open the proceedings of the day, as has been the case in previous meetings of the Congress in other places, the nature of the institutions and the habits of the people of the country in which this assembly was to take place, could not fail to make itself felt and to influence its organization. We are a people possessing and enjoying the most intense political life, in which every question of interest or importance to the nation is publicly canvassed and debated. The whole nation, as it were, from the highest to the lowest, takes an active part in these debates, and arrives at a judgment on the collective result of the thoughts and opinions thus called forth. This Congress could, therefore, only be either a private meeting of the delegates of different Governments, discussing special questions of interest in the midst of the general bustle of political activity, or it had to assume a public and a national character, addressing itself to the public at large, and inviting its co-operation.

The Government have chosen the latter alternative, and have been met by the readiest response from all sides. They have, I think, wisely chosen; for it is of the utmost importance to the object the Congress has in view, namely, not only the diffusion of Statistical information, but also the acquisition of a general acknowledgment of the usefulness and importance of this branch of human knowledge,—that the public, as a whole, should take up the questions which are intended to be investigated, and should lend its powerful aid. Gentlemen, this explains, and must serve as my apology for my presuming to hold the post of your President, for which I otherwise feel full well my unworthiness.

When, however, the Commissioners for the organization of the Congress expressed to me their desire that I should do so, I felt it incumbent upon me not to withhold my individual co-operation, carrying with it, as it would, an assurance to the British people that the object of the meeting was one which had enlisted the sympathy of their Queen, and testifying to the Foreign Delegates the esteem in which she holds them personally, and her appreciation of the science which they serve. Let me now welcome them to this country, and welcome them on behalf of this country. It is here that the idea of an International Statistical Congress took its origin, when delegates and visitors from all nations had assembled to exhibit in noble rivalry the products of their science, skill, and industry in the Great Exhibition of 1851; it is here that Statistical Science was earliest developed; and Dr. Farr has well reminded us that England has been called, by no less an authority than Bernouilli, “the cradle of political arithmetic,” and that we may even appeal to our Domesday Book as one of the most ancient and complete monuments of the science in existence. It is this country also which will and must derive the greatest benefits from the achievements of this science, and which will, consequently, have most cause to be grateful to you for the result of your labours.

Gentlemen, old as your science is, and undeniable as are the benefits which it has rendered to mankind, it is yet little understood by the multitude; it is new in its acknowledged position among the other sciences, and still subject to many vulgar prejudices. It is little understood, for it is dry and unpalatable to the general public in its simple arithmetical expressions, representing living facts (which as such are capable of arousing the liveliest sympathy) in dry figures and tables for comparison. Much labour is required to wade through endless columns of figures, much patience to master them, and some skill to draw any definite and safe conclusions from the mass of material which they present to the student; while the value of the information offered depends exactly upon its bulk, increasing in proportion with its quantity and comprehensiveness. It has been

little understood also from the peculiar and often unjustifiable use which has been made of it; for the very fact of its difficulty and the patience required in reading up and verifying the statistical figures which may be referred to by an author in support of his theories and opinions, protect him, to a certain extent, from scrutiny, and tempt him to draw largely upon so convenient and available a capital.

The public generally, therefore, connect in their minds Statistics, if not with unwelcome taxation (for which they naturally form an important basis), certainly with political controversies, in which they are in the habit of seeing public men making use of the most opposite statistical results with equal assurance in support of the most opposite arguments. A great and distinguished French minister and statesman is even quoted as having boasted of the invention of what he is said to have called "*l'art de grouper les chiffres*;" but if the same ingenuity and enthusiasm which may have suggested to him this art should have tempted him or others, as historians, to group facts also, it would be no more reasonable to make the historical facts answerable for the use made of them, than it would be to make statistical science responsible for many an ingenious financial statement. Yet this science has suffered materially in public estimation by such use, although the very fact that statesmen, financiers, physicians, and naturalists seek to support their statements and doctrines by Statistics, shows conclusively that they all acknowledge them as the foundation of truth; and this ought, therefore, to raise, instead of depressing, the science in the general esteem of the public.

Statistical science is, as I have said, comparatively new in its position among the sciences in general, and we must look for the cause of this tardy recognition to the fact, that it has the appearance of an incomplete science, and of being rather a helpmate to other sciences than having a right to claim that title for itself. But this is an appearance only; for if pure Statistics, as a science, abstains from participating in the last and highest aim of all science, viz., the discovery and expounding the general laws which govern the Universe,—and leave this duty to its more favoured sisters, the natural and the political sciences, this is done with conscious self-abnegation, for the purpose of protecting the purity and simplicity of its sacred task—the accumulation and verification of facts, unbiassed by any consideration of the ulterior use which may or can be made of them. Those general laws, therefore, in the knowledge of which we recognize one of the highest treasures of man on earth, are often left unexpressed, though rendered self-apparent, as they may be read in the uncompromising rigid figures placed before him. It is difficult to see how, under such circumstances, and

notwithstanding this self-imposed abnegation, Statistical science, as such, should be subject to prejudice, reproach, and attack; and yet the fact cannot be denied. We hear it said that its prosecution leads necessarily to Pantheism and the destruction of true religion, as it deprives, in man's estimation, the Almighty of His power of free self-determination, making His world a mere machine, working according to a general pre-arranged scheme, the parts of which are capable of mathematical measurement, and the scheme itself of numerical expression; that it leads to fatalism, and therefore deprives man of his dignity, of his virtue and morality, as it would prove him to be a mere wheel in this machine, incapable of exercising a free choice of action, but predestined to fulfil a given task and to run a prescribed course, whether for good or for evil.

These are grave accusations, and would be terrible indeed if they were true. But are they true? Is the power of God destroyed or diminished by the discovery of the fact that the earth requires 365 revolutions upon its own axis to every revolution round the sun, giving us so many days to our year, and that the moon changes 13 times during that period, that the tide changes every six hours, that water boils at a temperature of 212 degrees Fahrenheit, that the nightingale sings only in April and May, that all birds lay eggs, that 105 boys are born to every 100 girls? Or is man a less free agent because it has been ascertained that a generation lasts about 40 years, that there are annually put in at the post-offices the same number of letters on which the writers had forgotten to place any address; that the number of crimes committed under the same local, national, and social conditions is constant; that the full-grown man ceases to find amusement in the sports of the child? But our statistical science does not even say that this must be so; it only states that it has been so, and leaves it to the naturalist or political economist to argue that it is probable, from the number of times in which it has been found to be so, that it will be so again as long as the same causes are operating. It thus gave birth to that part of mathematical science called the calculus of probabilities, and even established the theory that in the natural world there exist no certainties at all, but only probabilities. Although this doctrine, destroying man's feeling of security to a certain extent, has startled and troubled some, it is no less true that, while we may reckon with a thoughtless security on the sun rising to-morrow, this is only a probable event, the probability of which is capable of being expressed by a determined mathematical fraction. From the vast collection of existing statistical facts the probable duration of man's life has been established with such precision that our insurance offices are able to enter with each individual into a precise bargain on the value of his life; and yet this does not imply

an impious pretension to determine when this individual is really to die.

But we are met also by the most opposite objections, and Statistics are declared useless, because they cannot be relied on for the determination of any given cause, and do only establish probabilities where man requires and asks for certainty. This objection is well founded, but it does not affect the science itself, but solely the use which man has in vain tried to make of it, and for which it is not intended. It is the essence of statistical science that it only makes apparent general laws, but that these laws are inapplicable to any special case; that, therefore, which is proved to be the law in general is uncertain in the particular. Herein lies the real refutation also of the first objection, and thus are the power, wisdom, and goodness of the Creator manifested, showing how the Almighty has established the physical and moral world on unchangeable laws conformable to His eternal nature, while He has allowed to the individual the freest and fullest use of his faculties, vindicating at the same time the majesty of his laws by their remaining unaffected by individual self-determination.

Gentlemen, I am almost ashamed to speak such homely truths (of which I feel myself at best to be a very inadequate exponent) to a meeting like this, including men of such eminence in the science, and particularly in the presence of one who was your first President, M. Quételet, and from whom I had the privilege, now twenty-four years ago, to receive my first instruction in the higher branches of mathematics—one who has so successfully directed his great abilities to the application of the science to those social phenomena, the discovery of the governing laws of which can only be approached by the accumulation and reduction of Statistical facts. It is the social condition of mankind, as exhibited by those facts, which forms the chief object of the study and investigation undertaken by this Congress, and it hopes that the results of its labours will afford to the statesman and legislator a sure guide in his endeavours to promote social development and happiness.

The importance of these International Congresses in this respect cannot be overrated. They not only awaken public attention to the value of these pursuits, bring together men of all countries who devote their lives to them, and who are thus enabled to exchange their thoughts and varied experiences; but they pave the way to an agreement among different Governments and Nations to follow up these common inquiries, in a common spirit, by a common method, and for a common end. It is only in the largest number of observations that the law becomes apparent, and the truth becomes more and more to be relied upon, the larger the amount of facts accurately observed which form the basis of its elucidation. It is consequently of the highest importance that observations identical in character

should embrace the largest field of observation attainable. It is not sufficient, however, to collect the Statistical facts of one class over the greatest area and to the fullest amount, but we require, in order to arrive at sound conclusions as to the influences producing these facts, the simultaneous collection of the greatest variety of facts, the Statistics of the increase of population, of marriages, births and deaths, of emigration, disease, crime, education, and occupation, of the products of agriculture, mining, and manufacture, of the results of trade, commerce, and finance. Nor, while their comparison becomes an essential element in the investigation of our social condition, does it suffice to obtain these observations as a whole, but we require also, and particularly the comparison of these same classes of facts in different countries, under the varying influences of political and religious conditions, of occupation, races, and climates.

And even this comparison of the same facts in different localities does not give us all the necessary materials from which to draw our conclusions; for we require, as much as anything else, the collection of observations of the same classes of facts in the same localities and under the same conditions, but at different times. It is only the element of time, in the last instance, which enables us to test progress or regress—that is to say, life. Thus the physician, by feeling the pulse of the greatest number of persons coming under his observation, old and young, male and female, and at all seasons, arrives at the average number of the pulsations of the heart in man's normal condition; by feeling the pulse of the same person under the most varied circumstances and conditions, he arrives at a conclusion on this person's pulse; again, by feeling the pulse of the greatest variety of persons suffering from the same disease, he ascertains the general condition of the pulse under the influence of that disease; it is now only that, feeling a particular patient's pulse, he will be able to judge whether this person is afflicted by this peculiar disease, as far as that can be ascertained by its influence on the pulse.

But all these comparisons of the different classes of facts under different local conditions, and at different times, of which I have been speaking, depend, not only as to their usefulness and as to the ease with which they can be undertaken, but even as to the possibility of undertaking them at all, on the similarity, nay congruity, of the method employed, and the expressions, figures, and conditions selected under which the observations have been taken. Does not, then, the world at large owe the deepest obligations to a Congress such as the one I am addressing, which has made it its especial task to produce this assimilation, and to place at the command of man the accumulated experience upon his own condition, scientifically elabo-

rated and reduced in a manner to enable the meanest intellect to draw safe conclusions?

Gentlemen, the Congress has at its various meetings succeeded in doing a great deal in this direction; the official Statistics of all countries have been improved, and in regard to the census, the recommendations of the Brussels meeting have been generally carried out in a majority of States. I am sorry to have to admit the existence of some striking exceptions in England in this respect; for instance, the census of Great Britain and Ireland was not taken on precisely the same plan in essential particulars, thereby diminishing its value for general purposes. The judicial statistics of England and Wales do not show a complete comparative view of the operation of our judicial establishments; nor, while we are in all the departments of the State most actively engaged in the preparation of valuable Statistics, can we deny certain defects in our returns, which must be traced to the want of such a central authority or commission as was recommended by the Congress at Brussels and Paris, to direct on a general plan all the great Statistical operations to be prepared by the various departments. Such a commission would be most useful in preparing an annual digest of the Statistics of the United Kingdom, of our widely-scattered Colonies, and of our vast Indian Empire. From such a digest the most important results could not fail to be elicited. One of the most useful results of the labours of the Congress has been the common agreement of all States to inquire into the causes of every death, and to return the deaths from the same causes under synonymous names, sanctioned by the Congress. It has in this instance set the example of establishing what is most desirable in all other branches of Statistics—namely, the agreement upon well-defined terms. There ought to exist no greater difficulty in arriving at such an agreement in the case of the various crimes than in that of “causes of death;” and it must be remembered that it is one of the first tasks and duties of every science to start with a definition of terms. What is it that is meant by a house, a family, an adult, an educated or an uneducated person, by murder, manslaughter, and so on? It is evident that as long as a different sense is attached to these terms in different returns their use for comparison is *nil*, and for simple study very much deteriorated; and still we have not yet arrived at such a simple and obvious desideratum! The different weights, measures, and currencies in which different Statistics are expressed cause further difficulties and impediments. Suggestions with regard to the removal of these have been made at former meetings, and will no doubt be renewed. We fancy here that our pound, as the largest available unit, with its florin, offers great advantages, particularly if further subdivided decimally. We hope to lay before you, as far as Great Britain is concerned, the Registrar-

General's analysis of the causes of death and the dangers that people encounter at each period of life; complete returns of the produce of our mines; the agricultural returns of Ireland, in which the Registrar-General of that country has given every year the breadth of land under every kind of crop, with an estimate of its produce, and has proved by his success in obtaining these facts at a comparatively moderate expense, and by the voluntary assistance of the landowners and cultivators, as well as of the clergy of all denominations, that the apprehension was groundless that it could not be done without inordinate cost or without injuring individual interests. We must hope that, considering its importance with regard to all questions affecting the food of the people, this inquiry will not only be extended to England and Scotland, but also to the Continent generally, wherever it may not already have been instituted. Our trade returns will exhibit the great effects produced on our commerce by the changes in our commercial system; our colonial delegates will exhibit to you proofs of the wonderful progress of their countries, and proofs at the same time that elaborate Statistics have rendered them conscious of that progress. And I have no doubt that the foreign delegates will more than repay us by the information which they will give us in exchange.

These returns will, no doubt, prove to us afresh in figures what we know already from feeling and from experience—how dependent the different nations are upon each other for their progress, for their moral and material prosperity, and that the essential condition of their mutual happiness is the maintenance of peace and good-will among each other. Let them still be rivals, but rivals in the noble race of social improvement, in which, although it may be the lot of one to arrive first at the goal, yet all will equally share the prize, all feeling their own powers and strength increase in the healthy competition.

I should detain you longer than I feel justified in doing, and should perhaps trench upon the domain and duties of Presidents of Sections, if I were to allude to the points which will there be specially recommended to your attention and consideration; but I trust that it will not be thought presumptuous in me if I exhort you generally not to lose yourselves in points of minute detail, however tempting and attractive they may be from their intrinsic interest and importance, but to direct your undivided energies to the establishment of those broad principles upon which the common action of different nations can be based, which common action must be effected if we are to make real progress. I know that this Congress can only suggest and recommend, and that it must ultimately rest with the different Governments to carry out those suggestions. Many previous recommendations, it is true, have been carried out, but many

have been left unattended to, and I will not except our own country from blame in this respect. Happy and proud indeed should I feel if this noble gathering should be enabled to lay the solid foundation of an edifice, necessarily slow of construction, and requiring for generations to come laborious and persevering exertion, intended as it is for the promotion of human happiness by leading to the discovery of those eternal laws upon which that universal happiness is dependent. May He who has implanted in our hearts a craving after the discovery of truth, and given us our reasoning faculties to the end that we should use them for this discovery, sanctify our efforts and bless them in their results.
